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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,288	07/14/2003	Mahadeva P. Sinha	06618-914001/CIT-3721	7721
20985	7590	07/28/2005	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			ROY, SIKHA	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,288

Applicant(s)

SINHA, MAHADEVA P.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4, 9, 11-13, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4, 9, 11-13, 21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment, filed on May 6, 2005 has been entered and is acknowledged by the Examiner.

Cancellation of claims 1,5-8, 10 and 14-20 has been entered.

New claims 21 and 22 have been entered.

Drawings

New corrected drawings of Figs. 1 and 2 designated by legend such as --Prior Art -- have not been received.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ion pump comprising GCMS system as claimed in claim 12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 12 is objected to because of the following informality:

In claim 12 line 2 'GCMS a system' should be replaced by -- GCMS system--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2,3,9,11,21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 2,993,638 to Hall et al.

Regarding claim 21 Hall discloses (Figs. 15 column 9 lines 3-5, column 10 lines 51 through column 11 line 37) an ion pump comprising plurality of anodes 18 which are substantially cylindrical and having first and second open ends, a combined housing

Art Unit: 2879

and cathode structure 25 (cathode comprising plurality of cathode plates lining the rectangular vacuum envelope) formed of cathode material, forming vacuum tight seal and having a hollow conduit 2 for connection to the vessel to be evacuated, the housing and cathode structure forming plurality of surrounding surfaces that surround the anodes 18 on all sides of the anodes and having plurality of extending surfaces (cathode rods)73 extending into the vacuum tight sealed area and into insides of the anodes from cathode surfaces 25, a magnet 27 surrounding at least a portion of the cathode and housing structure and a connection (conductive rod) 19 for voltage source which allows pumping by the ion pump.

Referring to claim 2 Hall discloses (column 5 lines 23-35) the housing and cathode structure 25 formed of titanium.

Regarding claim 3 Hall discloses (column 5 lines 60-66) the magnet 27 is formed of substantially C (horse-shoe) shape.

Regarding claim 9 Hall discloses (Fig. 1 column 10 lines 67-70) the ppump further comprises a source of DC positive potential applied to the anode 18 and the cathode plates 25 coupled to the rectangular housing are connected to ground potential.

Regarding claim 11 it is clearly evident from Fig. 15 that the magnetic field provided by magnet 27 extends along a direction that is co-axial with the axis of the anodes 18.

Regarding claim 22 Hall discloses (column 10 lines 55-61) both the housing (lining of the envelope) 25 and the plurality of extending surfaces 73 are both made of cathode material, titanium.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 2,993,638 to Hall et al., and further in view of U.S. Patent 5, 689, 070 to Clark et al.

Regarding claim 4 Hall does not exemplify the magnet formed of one of vanadium permendur magnetic material.

Clark in pertinent art of electromagnetic acoustic transducer discloses (column 5 lines 19-30) the core formed of magnetic material such as vanadium permendur. Clark further notes that this configuration of the core made of vanadium permendur has high magnetic permeability and high saturation magnetization and hence provides strong magnetic saturation field.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include the permanent magnet in the ion pump of Hall made of vanadium permendur as taught by Clark for providing strong magnetic field resulting in excellent operation of the ion pump.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 2,993,638 to Hall et al. and further in view of U.S. Patent 5,525,799 to Andresen et al.

Regarding claim 12 Hall is silent about a GCMS system receiving its vacuum from the ion pump.

Andresen in relevant art discloses a GCMS system having an ion pump attached, for removing trace of gas impurities.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include a GCMS system attached with the ion pump of Hall as suggested by Andresen for removing trace of gas impurities from the GCMS system.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 2,993,638 to Hall et al. and further in view of U.S. Patent 6,805,980 to Uehara.

Regarding claim 13 Hall discloses a permanent magnet providing the magnetic field. Hall does not explicitly disclose the magnet formed of high energy product value magnet.

Uehara in pertinent art of thin film magnet production discloses (column 1 lines 15-25) thin film permanent magnets formed of Nd-Fe-B based magnetic material and Sm-Co based magnetic material yield high magnetic energy product and therefore can be used in a miniaturized electrical apparatuses.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to substitute thin film high magnetic energy product value magnet as taught

Art Unit: 2879

by Uehara for the permanent magnet in the ion pump of Hall for providing high magnetic energy and enhanced performance with reduced weight of the ion pump.

Response to Arguments

Applicant's arguments with respect to claim 21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 4,631,002 to Pierini discloses sputter ion pump with cathodes having blades radially adjacent to hollow cylindrical anodes. U.S. Patent 5,302,929 to Kovacs discloses vanadium permendur used as standard ferromagnetic material.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2879

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S.R.

Sikha Roy
Patent Examiner
Art Unit 2879

Karabi Guharay
Karabi Guharay
Primary Examiner